

IN THE SPECIFICATION:

Please amend the specification as follows:

Page 1, after the title and before the heading "FIELD OF THE INVENTION",  
please amend the application as follows:

SEISMIC P-WAVE VELOCITY DERIVED FROM  
VIBRATOR CONTROL SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

This ~~is a continuation-in-part of~~ application claims priority to U.S. Serial No.  
60/464,315 filed April 23, 2003, now abandoned, the disclosure of which is herein  
incorporated by reference.

FIELD OF THE INVENTION

[0001] This invention relates to seismic exploration, and more particularly to the  
mapping of underground features for oil and gas exploration.

Page 4, first two paragraphs, paragraphs [0014] and [0015], lines 1-2 on page 4, please amend the specification as follows:

[0014] FIG. 4 ~~illustrates an idealized relationship of  $V_p/V_s$  to Poisson's ratio~~  
is a crossplot of calculated  $V_p$  versus 20 meter iso-depth uphole velocities.

[0015] FIG. 5 ~~is a crossplot of calculated  $V_p$  versus 20 meter iso-depth uphole~~  
velocities illustrates an idealized relationship of  $V_p/V_s$  to Poisson's ratio.

Page 7, last partial paragraph to page 8, first partial paragraph, paragraph [0044], from line 21 on page 7 to line 6 on page 8, please amend the specification as follows:

[0044] The previous derivation shows that both  $K_g$  and  $D_g$  can be used to eliminate the dependence on density and Poisson's ratio to compute  $V_s$ . An idealized relationship of  $V_p/V_s$  to Poisson's ratio is shown in FIG. ~~[[4]]~~ 5. In general, Poisson's ratio for cohesionless soils ranges from 0.25 to 0.35 and for cohesive soils from 0.35 to 0.45. The corresponding  $V_p/V_s$  ratio will vary from 1.73 to 2.08 for cohesionless soils and from 2.08 to 3.32 for cohesive soils. The median of these ratios is 2.3. This value is used as a reasonable approximation of the  $V_p/V_s$  ratio for the near surface materials that will be sensed by the vibrator, as not all of these materials will be cohesive or cohesionless, but rather a combination of the two.

Page 9, first full paragraph, paragraph [0048], lines 1-4 on page 9, please amend the specification as follows:

[0048] FIG. [[5]] 4 shows a crossplot of estimated  $V_p$  and 20 meter iso-depth uphole velocities. The exhibited linear relation confirms the predictions. The plotted  $V_p$  is obtained by multiplying  $V_s$  by 2.3, for the reasons given above. This fits the data well where the slope of the best fitted line is approximately 1.